This listing of claims presented below replaces all prior versions and listings of claims in the application.

Listing of Claims

IN THE CLAIMS

Claims 1-17 (Cancel)

18. (Currently amended) A method ~~Method~~ to evaluate the integrity of ~~chromatin/DNA~~ chromatin or DNA of sperm cells of an animal comprising:

a) treating a sample containing the sperm, with a solution of DNA denaturing solution,

b) a single treatment step of treating the sample in the solution obtained in step a) with a lysis solution to extract nuclear proteins of the sperm cells, wherein the lysis solution does not contain protein denaturing detergents, and

c) evaluating the integrity of the ~~chromatin/DNA~~ chromatin or DNA of the sperm cells based on measurement of halo size of the sperm cells.

19. (Cancel)

20. (Currently amended) The method ~~Method~~ according to claim 18, wherein the lysis solution comprises a non-ionic non protein denaturing detergent.

21. (Currently amended) The method ~~Method~~ according to claim 20, wherein the non ionic detergent is selected from the group consisting of toctylphenoxypolyethoxyethanol (Triton X-100); N , N-bis(3-D-Gluconamidopropyl) cholamide (bigCHAP); Brij(r) 35 P; N-decanoyl-N-methylglucamine; digitonin; dodecanoyl-N-methylglucamide; heptanoyl-N-methylglucamide; branched octylphenoxy poly (ethyleneoxy) ethanol (Igepal CA-630); N-Nonanoyl-N-methylglucamine; Nonidet P 40; N-Octanoyl-N-methylglucamine; Span 20 solution; Polysorbate 20 (Tween 20) and a mixture thereof.

22.(Currently amended) The method ~~Method~~ according to claim 18, wherein the lysis solution comprises sodium chloride between 1 and 3M, dithiothreitol (DTT) between 0.001 and 2M, 2-amino-2 (hydroxymethyl)-1,3-propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.

23. (Currently amended) The method ~~Method~~ according to claim 18, wherein the lysis solution comprises 2.5M sodium chloride, about 0.2M DTT, about 0.2M Tris, about 1% Triton X-100 and a pH of about 7.5.

24.(Currently amended) The method ~~Method~~(Previously Presented) Method according to claim 18, wherein the DNA denaturing solution is an acid solution.

25. (Currently amended) The method ~~Method~~ according to claim 24, wherein the DNA denaturing solution comprises an acid selected from hydrochloric, acetic, nitric acid or a mixture thereof.

26.(Currently amended) The method ~~Method~~(Previously Presented) Method according to claim 25 wherein the DNA denaturing solution comprises hydrochloric acid.

27.(Currently amended) The method ~~Method~~ according to claim 18 wherein after steps a) and b) there is a sample staining step.

28. (Currently amended) The method ~~Method~~ according to claim 27 wherein the staining is made with a Wright type solution.

29. (Currently amended) The method ~~Method~~ according to claim 28, wherein the sample containing the sperm is included in a medium similar to a suspension.

30. (Currently amended) The method ~~Method~~ according to claim 29, wherein the sample containing the sperm is included in an agarose microgel.

31. (Withdrawn) A kit for performing the method of claim 18 which comprises:

a) a DNA denaturing solution;

b) a single lysis solution to extract nuclear proteins, wherein the lysis solution does not contain a protein denaturing detergent; and

c) instructions for treating the sperm and evaluating the integrity of the chromatin/DNA of the sperm.

32. (Withdrawn) The kit according to claim 31, wherein the lysis solution comprises sodium chloride between 1M and 3M , dithiothreitol (DTT) between 0.001M and 2 M, 2-amino-2 (hydroxymethyl)-1,3 propanediol (Tris) between 0.001M and 2 M and Triton X-100 between 0.1% and 3%.

33. (Withdrawn) The method according to claim 21,wherein the non ionic detergent is Triton X-100.

34. (Withdrawn) The method according to claim 29, wherein the medium is a microgel.